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41018 7590 10/17/2007	EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>18 July 2007</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-11 and 30-32</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-5,7-9,11,17 and 30-32</u> is/are rejected.

7)☒ Claim(s) <u>6 and 10</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>03 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>03/23/2005</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Response to Amendment

1.   The amendment received on July 18, 2007 has been entered in full.

2.   In response to the election/restriction requirement, applicant has elected claims 1-11, 17 and

30-32 for examination and cancelled all other claims.

3.   Applicant's amendments to the claims has been entered but are moot in view of ground(s) of

rejection(s) made below.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the

invention. Claim 7 recites the limitation "partitioning the plurality of data vectors of the mth regional

training set into at least two clusters based on similarity of the data vectors such that each of the at

least two clusters contains similar data vectors; and providing each of the at least two clusters to at

least a compression engine for processing". There is insufficient antecedent basis for this limitation

in the claim. Claim 7 depends on claim 1 and in claim 1, there is no disclosure of mth regional

training set. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless —
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1-2, 4-5, 7-9, 11 and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by

Tanaka, U.S. Patent No. 4,862,261.

Regarding claim 1, Tanaka discloses a method of compressing multidimensional data

comprising receiving the multi-dimensional data, the multi-dimensional data comprising a plurality

of data vectors indicative of an image of an object and partitioning the plurality of data vectors into

at least two clusters based on similarity of the data vectors such that each of the at least two clusters

contains similar data vectors (figures 2 and 3; col. 3, lines 1-35; col. 4, lines 45-68 through col. 5,

lines 1-35— overlapping regions represent similar vectors with clusters being blocks B and B') and

providing each of the at least two clusters to at least a compression engine for processing (col. 6,

lines 5-37).

Regarding claim 2, Tanaka discloses wherein the data vectors are partitioned in a

geometrically irregular fashion (col. 8, lines 45-58 – blocks of different sizes).

Regarding claim 4, Tanaka further discloses determining a plurality of codevectors through

training for approximating each of the data vectors of a cluster of the at least two clusters with a

fidelity above a predetermined threshold based on the data vectors contained in the cluster (col. 5,

lines 25-68 through col. 6, lines 1-25) and then encoding each of the data vectors of a cluster using a

codevector of the plurality of the codevectors (col. 6, lines 20-68 through col. 7, lines 1-30).

Regarding claim 5, Tanaka discloses storing the plurality of codevectors in a codebook of a

cluster (col. 5, lines 32-35) and further discloses storing in an index map of a cluster an index for

each of the data vector in the cluster indicative of a codevector's location within the codebook of

the cluster (Tanaka as before discloses storing codevector in a codebook on the memory and

apparently every data stored on the memory is indexed by the memory addresses through

representing an index map).

Regarding claim 7, Tanaka discloses providing the index map and codebook for transmission

(col. 6, lines 63-68 through lines 1-5 — decoder reading from the codebook in the indexed memory

map).

Regarding claims 8 and 9, Tanaka discloses wherein the size of the at least two clusters is

approximately similar within predetermined limits of difference and adaptively controlling the size of

each of the at least two clusters by splitting and merging the at least two clusters (col. 8, lines 45-68,

col. 7, lines 1-17).

Regarding claim 11, claim 11 has been similarly analyzed and rejected as per claim 1.

Claims 30-32 have been similarly analyzed and rejected as per claims 1, 4 and 5.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka, U.S. Patent

No. 4,862,261.

Regarding claim 3, claim 3 recites parallel compressing where each of the at least two clusters

is assigned to a respective compression engine of the at least two compression engines for

simultaneously processing the at least two clusters. Tanaka does teach processing at least two

clusters but do not teach the parallel processing of the clusters. However, examiner here takes

official notice that parallel processing is very well known in the art of image compression using

vector quantization. It would have been an obvious choice for one of ordinary skill in the art at the

time of invention was made to use parallel processing if the requirement exists for a fast and real

time image processing.

10.   Claims 6 and 10 are objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and any

intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manav Seth
Art Unit 2624
October 13, 2007

BHAVESH M MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600